

Vendor Perspective

Active Traffic Signal Management Workshop

December 13, 2011

Merrillville, Indiana

An aerial, isometric illustration of a city street intersection. The scene shows multiple roads, buildings, parking lots, and green spaces. A white rectangular box with the blue 'SIEMENS' logo is overlaid on the left side of the image. The overall style is clean and modern, typical of a professional presentation.

SIEMENS

An aerial photograph of a complex multi-level highway interchange with several overpasses and ramps, with cars visible on the roads.

Siemens Mobility Overview

§ Siemens Mobility Overview

§ Standards Development: Lessons Learned

§ Users: Diverse, Needing Information not Data

§ Vendor Needs: Adoption → Level Playing Field

§ Deployment: Correct from the Beginning

§ Deployment Status: Apps and Integration

Siemens Infrastructure and Cities Sector



USA Manufacturing



**Sacramento, California
Light Rail Trains**

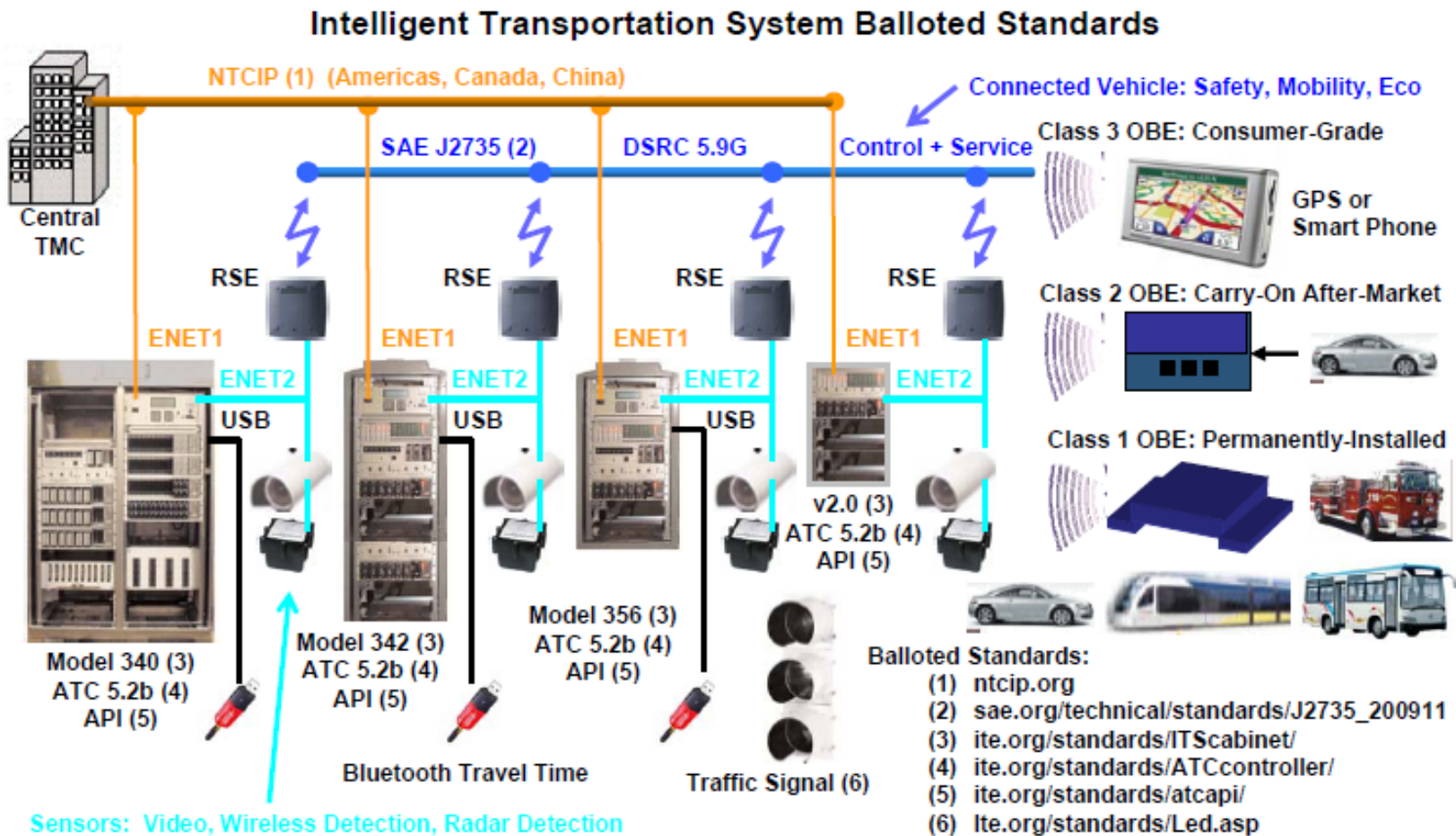


**Austin, Texas
Traffic Control Equipment**

Standards Development: Lessons Learned

- § Siemens Mobility Overview
- § **Standards Development: Lessons Learned**
- § Users: Diverse, Needing Information not Data
- § Vendor Needs: Adoption → Level Playing Field
- § Deployment: Correct from the Beginning
- § Deployment Status: Apps and Integration

Surface Transportation Standards: *ITE Journal*, May 2010



Advanced Transportation Controller Membership

Advanced Transportation Controller Joint Committee Membership

NEMA Members:

- | | |
|----------------------|---------------------------------|
| 1. Dave Miller | Siemens ITS, JC Committee Chair |
| 2. Ray Deer | Peek Traffic |
| 3. Craig Gardner | Intelight-ITS |
| 4. Scott Evans | Eberle Design |
| 5. Kleinjan Deetlefs | McCain |
| 6. Jon Wyatt | Intelligent Devices, Inc |

ITE Members:

- | | |
|------------------|--------------------------------|
| 1. Ed Seymour | Texas Transportation Institute |
| 2. Andrew Mao | Harris County, TX |
| 3. Robert Rausch | Transcore |
| 4. Mohamad Talas | New York City DOT |
| 5. John Thai | City of Anaheim |
| 6. Vacant | <Replaces Doug Tarico, McCain> |

AASHTO Members:

- | | |
|--------------------|------------------------------------|
| 1. Dave Holstein | Ohio DOT |
| 2. Guillermo Ramos | New York DOT |
| 3. Ken Montgomery | Georgia DOT |
| 4. Jeff McRae | CALTRANS |
| 5. Vacant | <Replaces Al Kosik, Texas DOT> |
| 6. Vacant | <Replaces Jack Brown, Florida DOT> |

NTCIP: Lessons Learned

Issue: Manufacturer-Specific Objects

Learn: Mandatory objects & data structures

Issue: Interpretation / Incompatibilities

Learn: Prototype à Refine à Test



Issue: Communication rate, capacity

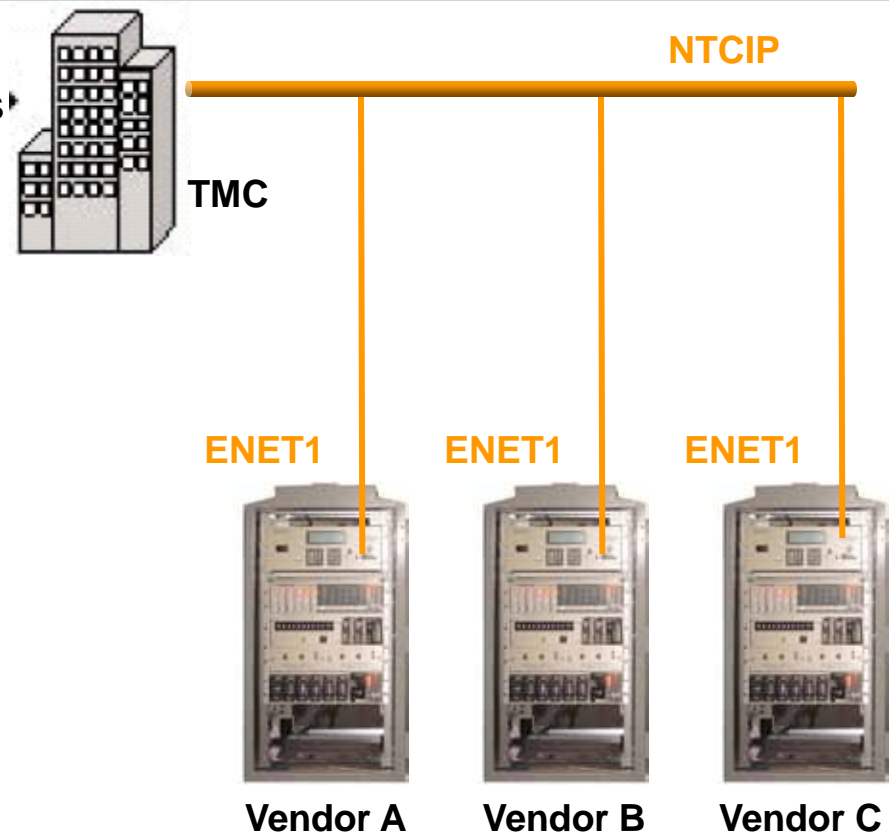
Learn: Collect à Condense à Convey

Issue: Latency

Learn: Timestamp

Issue: Long Development, Late Acceptance

Learn: Systems Engineering Process



Users

- § Siemens Mobility Overview
- § Standards Development: Lessons Learned
- § **Users: Diverse, Needing Information not Data**
- § Vendor Needs: Adoption à Level Playing Field
- § Deployment: Correct from the Beginning
- § Deployment Status: Apps and Integration

User Needs

Scalability: Performance Measure for Wide Cross Section of Users

- **Solo Intersections**
- **Corridors**
- **Urban Grids**

Investment Value

- **Limited funding must yield true improvements**
- **Verify improvements**
- **Could be part of funding model**

Measure not Model

- **Modeling output only as good as simulated inputs**
- **Modern technology can record every vehicle actuation**

Vendors

- § Siemens Mobility Overview
- § Standards Development: Lessons Learned
- § Users: Diverse, Needing Information, Not Data
- § **Vendors: Adoption à Level Playing Field**
- § Deployment: Correct from the Beginning
- § Deployment Status: Apps and Integration

Vendor Needs

Uniform Performance Measure for All

- **Level Playing Field**
- **Apples to Apples**

True Improvement Data

- **Install and run performance measures “before”**
- **Update equipment / software / control strategy**
- **Run performance measures “after”**

Widespread Adoption of Uniform Performance Measures

- **Need widely-accepted measure**
- **Published standard, NTCIP node**
- **Inclusion in bid contracts**

Deployment

- § Siemens Mobility Overview
- § Standards Development: Lessons Learned
- § Users: Diverse, Needing Information, Not Data
- § Vendors: Adoption → Level Playing Field
- § **Deployment: Correct from the Beginning**
- § Deployment Status: Apps and Integration

Deployment

Correct from the Beginning

- Expensive to update thousands of intersections, not iterative
- Smallest defect could invalidate large base of historical records

Baseline Hardware and Communications Lifecycle

- Retrofit to older controllers?
- Work on all legacy communications systems?
- Most installations trending towards Ethernet IP, replace legacy

Performance Measures Record the Effect Of:

- Pedestrian Phases
- Transit Priority
- RR Preemption

Deployment Status

- § Siemens Mobility Overview
- § Standards Development: Lessons Learned
- § Users: Diverse, Needing Information, Not Data
- § Vendors: Adoption à Level Playing Field
- § Deployment: Correct from the Beginning
- § **Deployment Status: Apps and Integration**

Advanced Transportation Controller (ATC 5.2b)

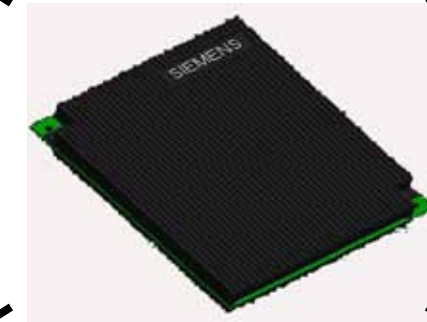
Rack Mount ATC



2070-1C Retrofit



Shelf Mount ATC

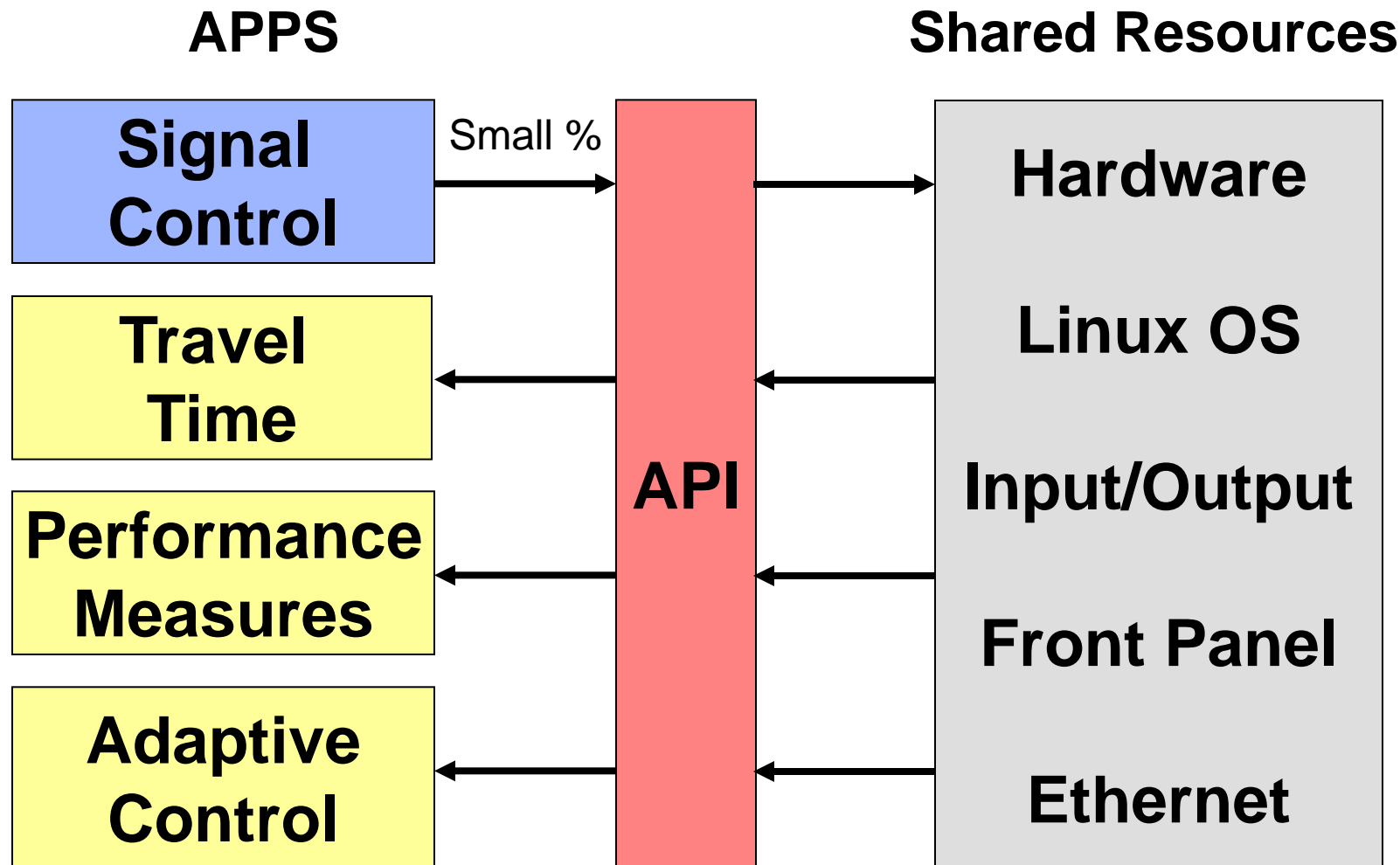


**Engine Board
Embedded Linux 2.6
Interchangeable
Among
Manufacturers
“Future Proofing”**


NEMA Retrofit



Single Controller, Multiple Applications



Bluetooth Travel Time



UTCM *Improving the Quality of Life by Enhancing Mobility*
University Transportation Center for Mobility™

DOT Grant No. DTRT06-G-0044

Bluetooth®-Based Travel Time/Speed Measuring Systems Development

Final Report

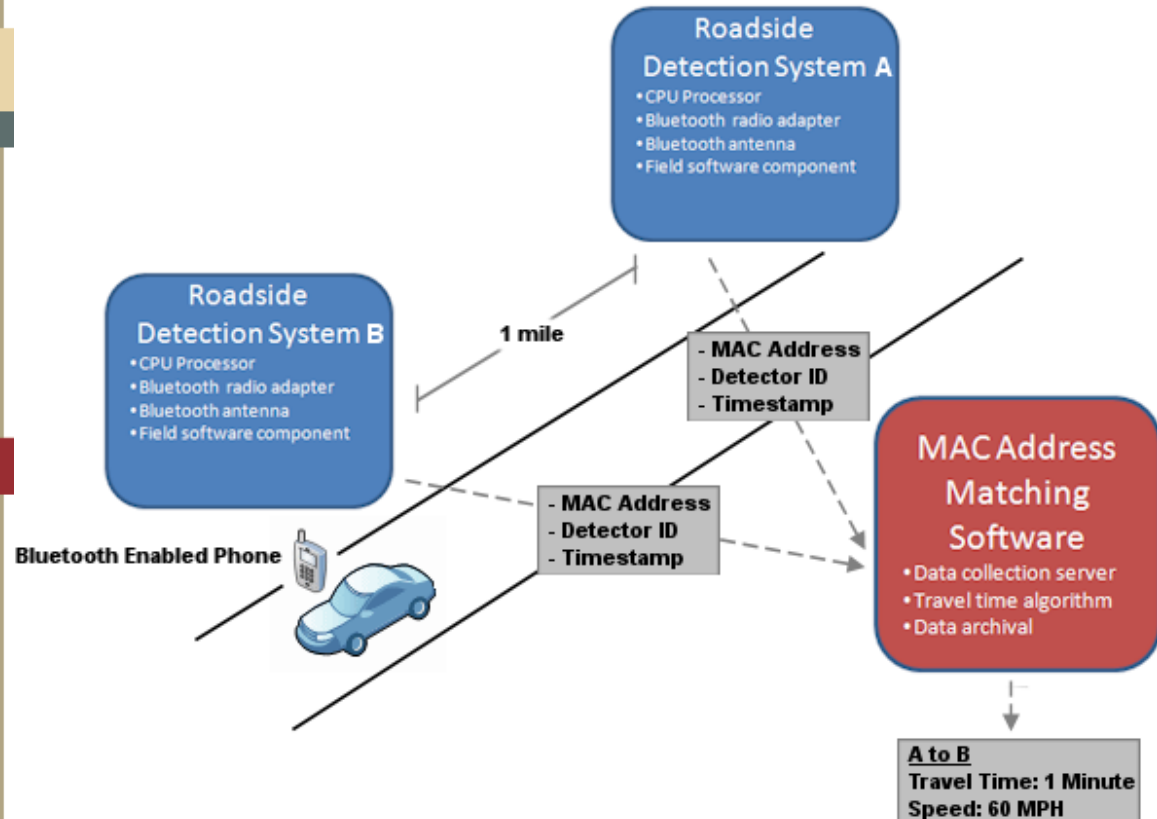
Darryl D. Puckett and Michael J. Vickich

Performing Organization
 University Transportation Center for Mobility™
 Texas Transportation Institute
 The Texas A&M University System
 College Station, TX

Sponsoring Agency
 Department of Transportation
 Research and Innovative Technology Administration
 Washington, DC

Texas Transportation Institute

UTCM Project #09-00-17
 June 2010

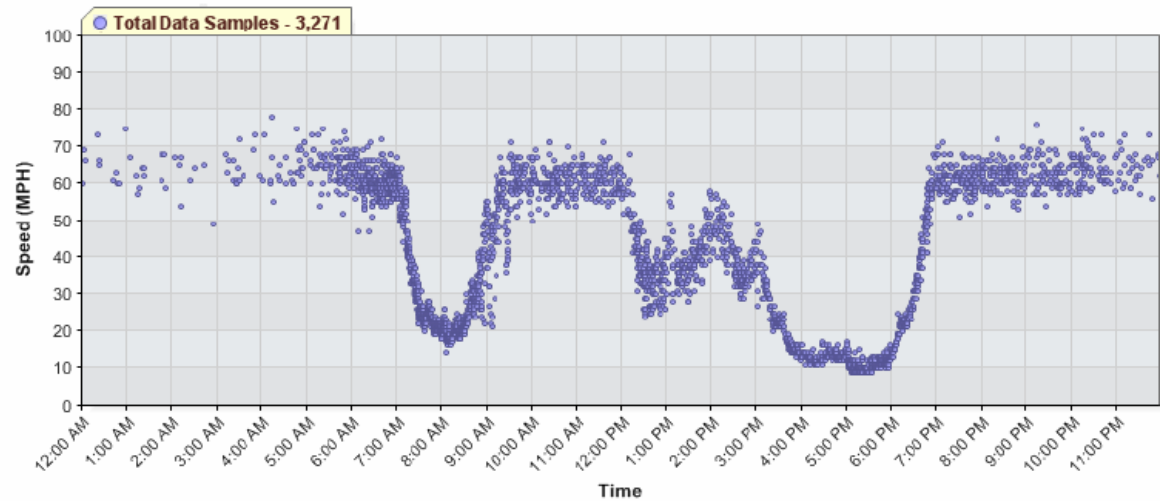


Courtesy of Texas Transportation Institute

Bluetooth Travel Time, October 2009

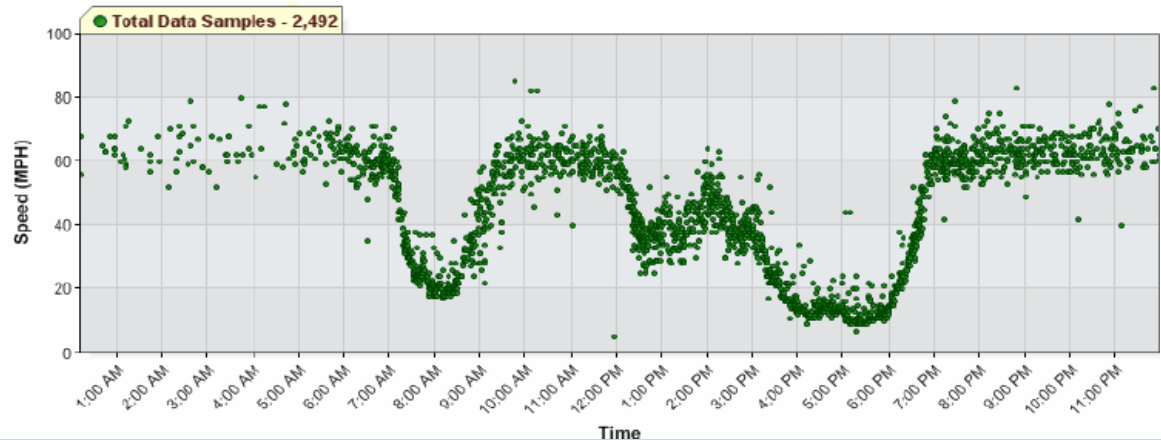
3,271 matches

AVI Toll Tag Speed Data Samples - I-610 Northbound from I-10 to Ella (2.2 Miles)
Thursday, October 1, 2009



2,492 matches

Bluetooth Speed Data Samples - I-610 Northbound from I-10 to Ella (2.2 Miles)
Thursday, October 1, 2009

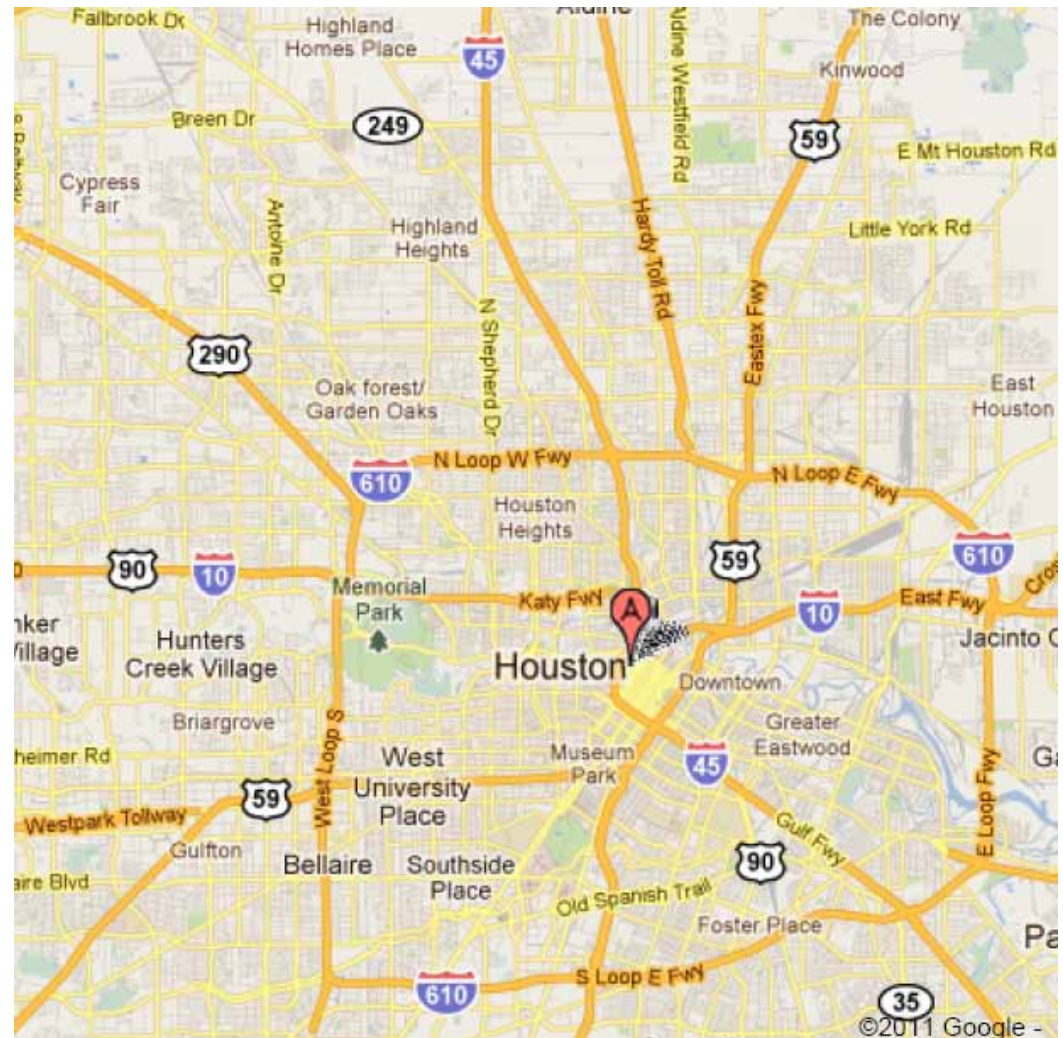
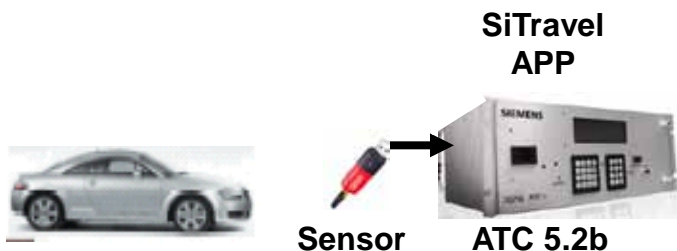


Courtesy of
Texas Transportation Institute

Use Case: ARRA Harris County TX

387 Intersections

- Hurricane Evacuation
- Gulf Coast to Dallas
- Travel Time Software APP
- Performance Measure APP
- Connected Vehicle DSRC Later
- World Congress White Paper



Thank you for your attention!

Dave Miller

Innovations Manager, R&D

SII IC MOL CTE

8004 Cameron Road

Austin, Texas 78754

Phone: +1 512 837-8407

Fax: +1 512 837-0196

Mobile: +1 512 589-5749

E-mail:

miller.dave@siemens.com